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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,522	08/27/2003	Hirofumi Muratani	241983US2SRD	3965
22850 7590 07/02/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WANG, CLAIRE X	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 07/02/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/648,522	<b>Applicant(s)</b> MURATANI, HIROFUMI	
	<b>Examiner</b> Claire Wang	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 1-9, 24 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-11, 13, 23, 25, 27 is/are rejected.
- 7) ☒ Claim(s) 12 and 14-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 10-23, 25, and 27 in the reply filed on 5/21/2007 is acknowledged. The traversal is on the ground(s) that the search of the two claim sets would not place a burden upon the Examiner. This is not found persuasive because Group I (claims 1-9, 24 and 26) are drawn to a way to digitally embed watermark, classified in class 358, subclass 3.28 making them classified under a different class than Group II (claims 10-23, 25, and 27). The search of Group I is not identical to that of Group II, thus making it burdensome to search.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Objections***

2. Claim 23 is objected to because of the following informalities:
- a. In line 3 of claim 23, the word "includes" should be changed to "include".
- Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10-23, 25 and 27 are rejected under 35 U.S.C. 112 second paragraph.

a. Claims 10 and 25 recite the limitation "second symbol sequences" in line 14 of page 60, and lines 17-18 of page 66. There are insufficient antecedent basis for this limitation in the claims.

b. Claim 10, 25 and 27 recite the limitation "a plurality of the symbols based on the symbols" in lines 9-10 of page 60, lines 12-13 of page 66, lines 26-27 of page 67. There are insufficient antecedent basis for this limitation in the claims.

c. Claim 11,15,16, 17 and 18 recite the limitation "the second symbol sequences" in lines 19-20 of page 60, line 1 of page 62, lines 8-9 of page 62, lines 19-22 of page 62 and lines 13-17 of page 63. There is insufficient antecedent basis for this limitation in the claim.

d. Claim 15 recites the limitation "third symbol sequences" in lines 1-2 of page 62. There are insufficient antecedent basis for this limitation in the claims.

e. Claim 16 recites the limitation "the third symbol sequences" in lines 9-10 of page 62. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10, 11, 13, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yacobi et al. (US 2005/0086486 hereinafter "Yacobi") in view of Malik et al. (US 7,068,823 hereinafter "Malik").

As to claim 10, Yacobi teaches a digital watermark analysis apparatus for specifying at least one of a plurality of identification information items embedded as a plurality of watermark information items in a plurality of legal copies of digital contents used for collusive attacks, from a plurality of illegal copies of the digital contents obtained by collusive attacks made against the legal copies (fingerprinting technology for protecting digital goods by detecting collusion attacks and identifying the participating colluders; Paragraph [0002], lines 3-6), the digital watermark analysis apparatus comprising: an extraction unit configured to extract a plurality of embedded codes (obtaining a media signal suspected of being modified; 410 Fig. 4), each of the ranks being uniquely numbered among each of the symbol sequences (determining whether the suspected media signal has fingerprints of colluders; 416 Fig. 4) (where the term "fingerprints" refers to unique entity identifier; [0021], line 1); and a specifying

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unit configured to specify at least one of the identification information items embedded in the legal copies (obtaining a subject media signal; 310 Fig. 3), based on the first symbol sequence and second symbol sequences uniquely assigned to the identification information items (obtaining the individualized watermark detection key associated with a specific client, but not obtaining it from the subject media signal; 312 Fig. 3). However, Yacobi does not teach the fingerprint extracted from the suspected copy includes ranks; an acquisition unit configured to acquire a plurality of symbols corresponding to the embedded codes and arrange the symbols in accordance with the ranks of the embedded codes, and acquire a first symbol sequence of symbol sequences each of which includes a plurality of the symbols based on the symbols.

Malik teaches a fingerprinting apparatus for the purpose of watermarking (Col. 1, lines 20-26). Said fingerprinting apparatus generates Representative Master Key (RMK) which can be identified using tuple in the form of  $(x, y)$ . The term  $x$  can range from 1 to  $n$  and the term  $y$  can range from 1 to  $m$  (Col. 9, lines 11-14). RMK has one or more Key Sets (KSs), which can be arranged according to the tuple order in ascending order (Col. 9, lines 36-40). Thus, Malik's fingerprinting apparatus that arranges KSs in ascending order reads on the claimed ranking the embedded codes in order.

Therefore, it would have been obvious for one ordinarily skilled in the art at the time the invention was made to combine Yacobi's collusion-resistant watermarking and fingerprinting apparatus with Malik's coding fingerprinting apparatus in order to protect copyright holders against the problems associated with pirated copies (Malik Col. 1, lines 23-24).

As to claim 11, Yacobi and Malik teach wherein the specifying unit specifies at least one of the identification information items based on the second symbol sequences each of which include a plurality of symbols including the ranks (RMK has one or more Key Sets (KSs), which can be arranged according to the tuple order in ascending order; Malik Col. 9, lines 36-40); and the acquisition unit acquires a plurality of the symbols including the ranks, the symbols corresponding to the embedded codes (RMK has one or more Key Sets (KSs), which can be arranged according to the tuple order in ascending order; Malik Col. 9, lines 36-40), the embedded codes being embedded in the legal copies (obtaining original marked media signal; Yacobi 412 Fig. 4).

As to claim 13, Yacobi and Malik teach wherein the extraction unit extracts several of the embedded codes which are generated in a random number sequence (pseudo-random; Malik Col. 2, line 67) such that the embedded codes corresponding to the symbols including a same rank in the symbol sequences include one of no cross-correlation and a very low cross-correlation (Fig. 3 shows the generation of unique ID using master keys); and the extraction unit obtains, in units of the ranks, cross-correlation between embedded codes corresponding to the symbols contained in the first symbol sequence, and obtains one of the embedded codes which includes a maximum cross-correlation (compare matches with threshold; 922 Fig. 9).

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As to claim 25, it is the method claim of claim 1. Please see claim 1 for detail analysis.

As to claim 27, it is the program claim of claim 1. Please see claim 1 for detail analysis.

As to claim 23, Yacobi teaches wherein the identification information items include unique information assigned to users who provide the legal copies (312 Fig. 3).

***Allowable Subject Matter***

4. Claims 12, 14-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten to overcome the 35 U.S.C. 112 second paragraph rejections.



***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Bruckers et al. (US 2005/0108535) teaches a robust collusion watermarking system.
- b. Safavi-Naini et al. (US 2002/0181732) teaches a method of collaborative watermarking of a digital content.

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**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Claire Wang whose telephone number is 571-270-1051. The examiner can normally be reached on Mid-day flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Claire Wang  
06/21/2007



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SUPERVISORY PATENT EXAMINER